

The Story of American Wildlife Restoration Past, Present and Future



Early settlements along the Atlantic coast.

The first New World settlements were established by the Spanish in Florida and the French in Canada. The first English settlements were established along the Eastern coast of North America by royal land grants, business speculators and those seeking religious freedom.

St. Augustine	Florida	1565
Quebec,	Canada	1603
Jamestown	Virginia	1607
N. Amsterdam	New York	1624
Baltimore	Maryland	1632
New Sweden	New Jersey	1638
Albemarle	(N.) Carolina	1650
Charleston	(S.) Carolina	1663
Savannah	Georgia	1733



Early Settlers Arriving in the New World Perceived the Natural Resources as Boundless.

From William Barrett of the Jamestown Colony of Virginia, 1610:

“The Beasts of the Countrie, as Deere, red, and fallow, do answere in multitude to our proportion of oxen, which appeareth by these experiences. First the people of the Countrie are apparelled in the skinnnes of these beasts; Next, hard by the fort, two hundred in one heard have been usually observed: Further, our men have seene 4000 of these skins pyled up in one wardroabe of Powhatan;” (Pocahontus was a Powhatan)

“The Turkeys of that Countrie are great, and fat, and exceeding in plentie. The rivers from August, or September, till February, are covered with flocks of Wildfoule: as swannes, geese, ducke, mallard, teal, wigeons, hearons, bitters, curlewes, godwights, plovers, snights, dottrels, cormerants, (to use the words of Sir Thomas Gates) in such abundance as are not in all the world to be equalled.”

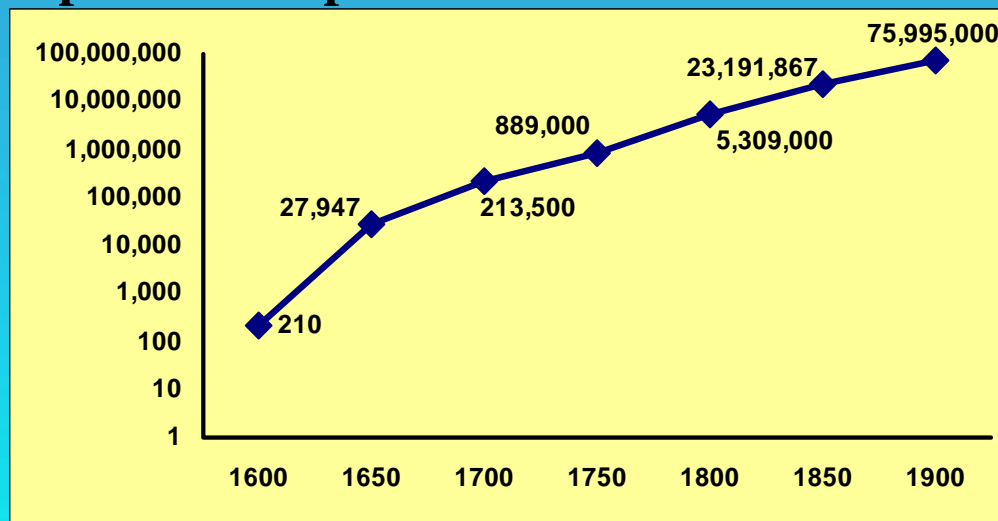
(A True Declaration of the estate of the Colonie in Virginia, With a confutation of such scandalous reports as have tended to the disgrace of so worthy an enterprise. Personal Narratives from the Virtual Jamestown Project, 1575-1705, Virtual Jamestown, Virginia Center for Digital History, University of Virginia. <http://etext.lib.virginia.edu/etcbin/jamestown-browse?id=J1059>)



Population and Land Expansion

In 1750, the population in the New world approached 1 million people. In the next 100 years the population grew to over 23 million. Much of the economy depended on natural resources. Little thought was given to the impacts on wildlife and habitat. Natural resources were still considered, by most, as an endless commodity.

Population Expansion



U. S. Census Bureau (*logarithmic scale*)

Territorial Expansion

1803 - Louisiana Purchase

1818 – Canadian Border set

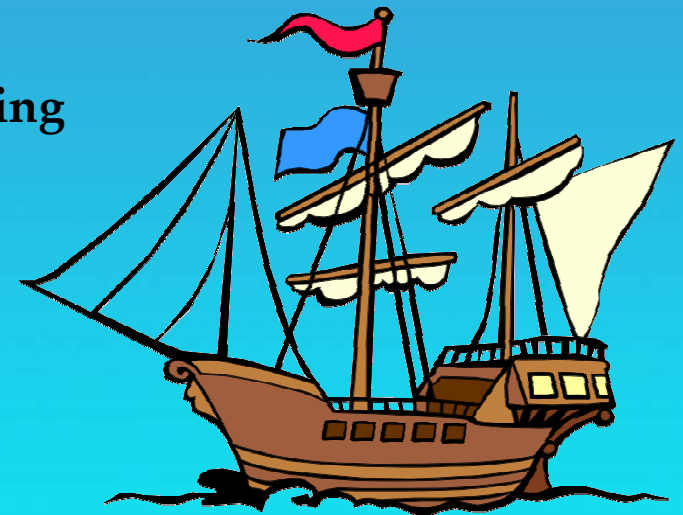
1846 – Oregon N. Border set

**1848 – TX, NM AZ, CA
as territories**

The Early Economy Was Dependent on Natural Resources.

Agriculture cleared the forest for growing food crops and tobacco. Lumbering cleared the forests of timber for shipbuilding, papermaking, and firing the smelting furnaces of the ironworks.

Rhode Island –Agriculture, lumbering
Massachusetts -Agriculture, lumbering, shipbuilding
New Hampshire -Agriculture, textiles, shipbuilding
Connecticut – Agriculture
Delaware -fishing, lumbering
Pennsylvania – Agriculture, papermaking, shipbuilding
New York – Shipbuilding, agriculture
New Jersey - Iron works, lumbering
Maryland – Shipbuilding, ironworks, agriculture
Virginia – Agriculture
N. Carolina – Agriculture
S. Carolina - Agriculture
Georgia – Agriculture



The Fur Trade

Not only was loss of forest and grassland habitat affecting wildlife populations, both locally and regionally, the commercial harvest of wildlife, also, greatly impacted many species. Mink, otter, and ermine were used for the finest coats and collars or trimmings in Europe and Asia. American beaver fur was preferred by European hat makers because of the fine grade of felt it produced. The deerskin trade increased in the Southeast.

1630 – Beaver declining in the Northwest Territory (Eastern Canada)

1640 – Beaver gone from New York

1753 – 30,000 deerskins exported from North Carolina

1840 - Lack of game leads to the Last Green River Trapper's Rendezvous

1897 – Beaver gone from North Carolina

1900's – Martin, Fisher, Wolverine gone from Wisconsin



The Plume Trade

In 1886, Ornithologist Frank Chapman observed the hats worn by women walking the streets of New York and noted the birds or feathers used to adorn them. On two occasions, 700 hats were observed. Of those hats, 293 were adorned with birds or feathers. Here is the list of birds or bird feathers he observed. The plume trade had a significant impact on bird populations and species.

Species	#Hats	Species	#Hats
Grebes	7	Blue Jay	5
Green-backed Heron	1	Eastern Bluebird	3
Virginia Rail	1	American Robin	4
Greater Yellowlegs	1	Northern Shrike	1
Sanderling	5	Brown Thrasher	1
Laughing Gull	1	Bohemian Waxwing	1
Common Tern	21	Cedar Waxwing	23
Black Tern	1	Blackburnian warbler	1
Ruffed Grouse	2	Blackpoll Warbler	3
G. Prairie Chicken	1	Wilson's Warbler	3
N. Bobwhite Quail	16	Tree Sparrow	2
California Quail	2	White-throated Sparrow	1
Morning Dove	1	Snow Bunting	15
N. Saw-whet Owl	1	Bobolink	1
N. Flicker	21	Meadowlark	2
Red-headed Woodpecker	2	Common Grackle	5
Pileated Woodpecker	1	Baltimore Oriole	9
Eastern Kingbird	1	Scarlet Tanager	3
Scissor-tailed Flycatcher	1		
Tree Swallow	1		
Pine Grosbeak	1		

Taken from: Ehrlich, P., D. S. Dobkin and D. Wheve. 1988. The Plume Trade.
Internet website: http://www.stanfordalumni.org/birdsite/text/essays/Plume_Trade.html

Market Hunting and the Railroad

The railroads opened up other markets to sell wild meat and hides. The demand grew.

“In 1873, for example, the trade in wild game at Chicago (rail yard) amounted to several million pounds. Carloads of it arrived almost daily during the fall and winter months –buffalo, antelope, deer, elk and bear meat –passenger pigeons, prairie chickens, grouse, quail, wild ducks, geese and turkeys numbering over a million birds.”

(Forest Preserve Cook County. Nature Bulletin #654. November 4, 1961.
John J. Duffy, President, Roberts Mann, Conservation Editor,
David H. Thompson, Senior Naturalist.)



Market Hunting and Waterfowl

Incredible numbers of ducks were harvested by market hunters in the late 1800s and early 1900s. They could make a good living selling mallards for \$1.25 and smaller ducks brought up to \$0.50. The harvest could be shipped by railroad to restaurants in the cities.



One Weekend's Hunt at Browning (Illinois), circa early 1900's. There was no limit on the number of ducks a hunter could take in the early 1900's.

Photograph: Lavina Walton, Browning, Illinois.



Three Hunters Bag 192 Ducks in Eight Days, circa 1903-1920

Photograph: Page Hatch

Information and images taken from:

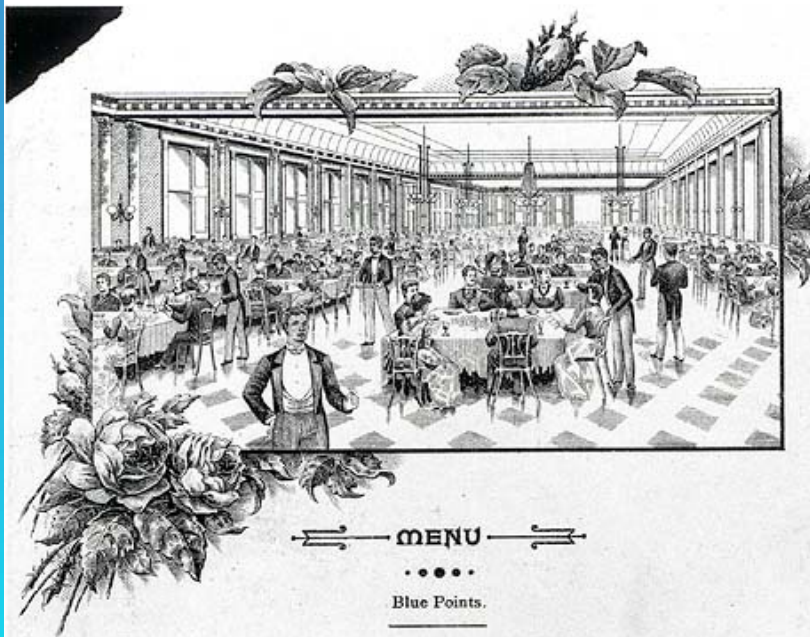
http://www.museum.state.il.us/RiverWeb/harvesting/harvest/waterfowl/industry/market_hunting.html



Wild Game Was a Staple in Many Restaurants.

Image from Chicago Historical Society.

http://www.museum.state.il.us/RiverWeb/harvesting/archives/images/index.html?RollID=roll10&FrameID=BA07_1000



MENU

.....

Blue Points.

Soup.

Venison a la Chasseur.

Consomme of Prairie Chicken.

Fish.

Baked White Fish, Port Wine Sauce.

Boiled Trout, Lobster Sauce.

Boiled.

Wild Turkey.

Leg of Mountain Sheep.

Roast.

Saddle of Antelope.

Mountain Sheep.

Leg of Venison.

Pheasants.

Wild Goose.

Blue Grouse.

Mallard Duck.

Quail.

Prairie Chicken.

Red-Head Duck.

Sage Hen.

Wild Turkey.

Jack Rabbit.

Spotted Grouse.

Black Tail Deer.

Plover.

Canvass-Back Duck.

Black Bear.

Wood Duck.

English Hare.

Blue-Wing Teal.

Sand-Hill Crane.

Squirrel.

Opossum.

Ruffed Grouse.

Coon.

Leg of Elk.

Partridges.

Brandt.

Cinnamon Bear.

Saddle of Black-Tail Deer.

Widgeon.

Ornaments.

HUNTERS' SURPRISE.

THE COON HUNT.

Broiled.

Blue-Wing Teal.

Pheasants.

Jack Snipe.

Quail.

Marsh Birds.

Blackbirds.

Rabbit.

Plover.

Gray Squirrel.

Reed Birds.

Venison Steak.

Partridge.

Butter-Ball Duck.

Rice Birds.

English Snipe.

Vegetables.

Boiled and Mashed Potatoes.

Green Peas.

Stewed Tomatoes.

Sweet Potatoes.

Celery.

Sweet Corn.

Spinach.

Entrees.

Ragout of Squirrel.

Rabbit Braise, Sauce Burgundy.

Venison Cutlet, Jelly Sauce.

Fillet of Grouse aux Truffles.

Dressed Celery.

Prairie Chicken Salad.

Ornamental Dishes.

Pyramid of Game en Bellevue.

Pyramid of Wild Goose Liver in Jelly.

Boned Duck au Naturel.

Boned Quail in Plumage.

Blackbirds at Play.

Prairie Chicken on Socle.

Dessert.

Confectionery.

Fancy Almond Cake.

Candy Pyramid.

Wine Jelly.

Bon Bons.

Lady Fingers.

Apples.

Oranges.

Nuts.

Raisins.

Figs.

California Grapes.

Catawba Grapes.

Vanilla Ice Cream.

Roman Punch.

Cheese.

Biscuit.

COFFEE.

Chicago, Nov. 23, 1889.

By the Early 1900s Population Numbers of Many Species, such as White-tailed Deer and Elk, Were in Significant Decline.

1865 – Elk gone from Tennessee

1866 – Elk gone from Wisconsin

1870 – Southern Michigan white-tailed deer are gone 1900 – Elk gone from Texas

1900s – White-tailed Deer are gone from most of Illinois

1925 – Missouri estimated only 400 deer statewide

1930 – Arkansas estimated a few hundred deer statewide

Early 1900s – Tennessee estimates only 500 deer statewide



The Wild Turkey Was in Rapid Decline.

1840 – Wild Turkey “virtually eliminated” from New York

1881 – Wild Turkey gone from Wisconsin

1900s – Wild Turkey gone from Iowa

1900s – Wild Turkey “nearly silenced” in Georgia

1900s – Wild Turkey gone from N. Carolina

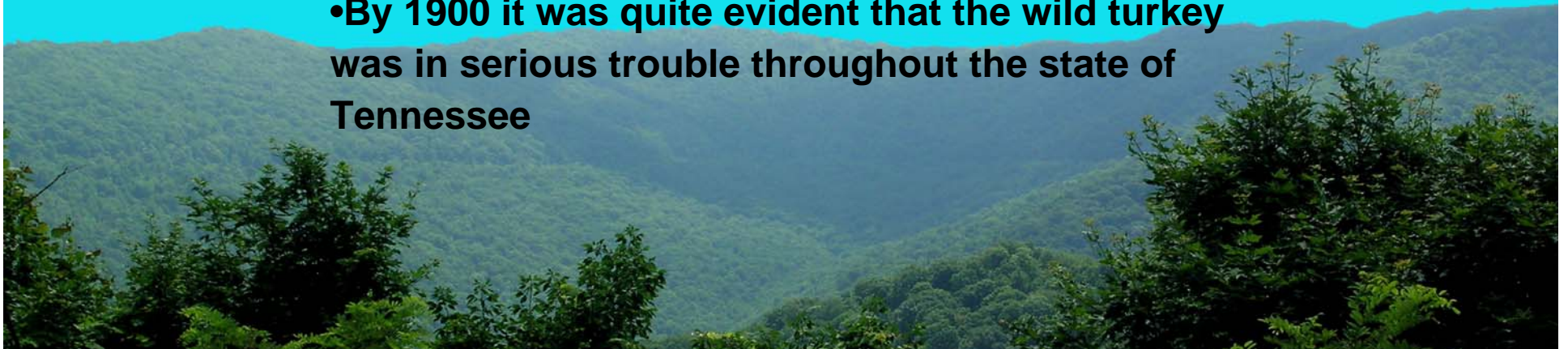
1910 – Wild Turkey gone from 2/3 Virginia

1920 – 18 of 39 states had lost Turkeys

Tennessee

- Wild turkey flocks had been steadily declining throughout Tennessee during the last half of the 18th century

- By 1900 it was quite evident that the wild turkey was in serious trouble throughout the state of Tennessee

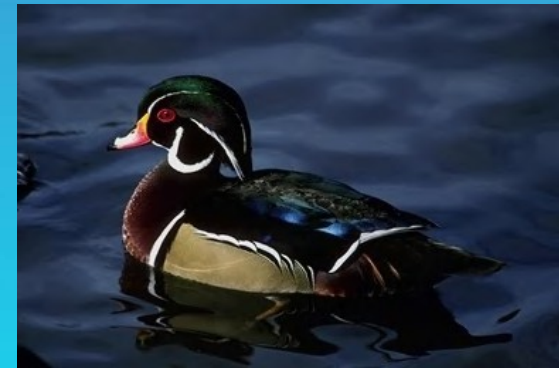


The Wood Duck was declining drastically.

Destruction of bottomland hardwoods, plume and market hunting brought the Wood Duck to near extinction across its range.

1901 – U. S. Biological Survey reported the Wood Duck faced extinction.

1918 – Wood Duck season closed by the U. S. Dept. of Agriculture.



These Were the Rare or “Endangered Species” of the Early 1900s

By the early 1920s there was a realization that many species important to the natural heritage of our country would soon be lost without a large-scale recovery and management effort.

Wood Duck

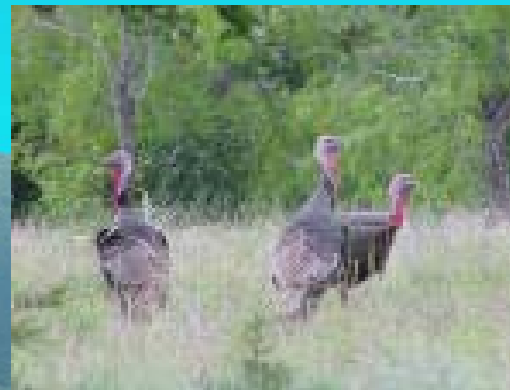


White-tailed Deer



Eastern Elk

Wild Turkey



Wildlife Restoration in America – The State / Federal Partnership

Federal excise taxes levied on the sale of hunting and fishing equipment is collected by the U. S. Fish and Wildlife Service and distributed to the states based on a formula which considers the size and population of the state. States contribute money from license sales and other nonfederal funds to develop and implement recovery/management programs.



1937 Pitman-Robertson Wildlife Restoration Act (PR)



1950 Dingle-Johnson Sportfish Restoration ACT (DJ)



Because habitat management affects many species, management targeting game species has also benefited nongame species.

For example, food plots and field borders established for white-tailed deer, bobwhite quail and wild turkeys also benefit deer mice and other rodents, snakes such as racers and rat snakes, red-tailed hawks, red-winged blackbirds, meadowlarks and other songbirds.

Meadowlark



Dickcissel



Red-tailed Hawk



Fielder Buffer of native warm season grasses



Quail nest in Field border



Wild Turkey



State Wildlife Grants

Although nongame species do benefit from habitat management funded through PR and DJ funds, no long-term, dedicated federal funding has been developed targeting nongame species management, until now. In an effort to stop the population decline in many other species, the State Wildlife Grant (SWG) Program is providing states with congressionally appropriated funds targeting “species of concern”. Now game species and nongame species, alike, have dedicated funds enabling the states to better meet their obligations of managing all it’s wildlife resources.

SWG funds are being used to establish an oak savannah on Catoosa Wildlife Management Area



Declining Grassland Bird Species To Benefit from the Oak Savannah

Bachman's Sparrow
Henslow's Sparrow
Grasshopper Sparrow
Dickcissel
Chuck-will's-widow
Whip-poor-will
Prairie Warbler
Loggerhead Shrike
Redheaded Woodpecker

Game Species to Benefit

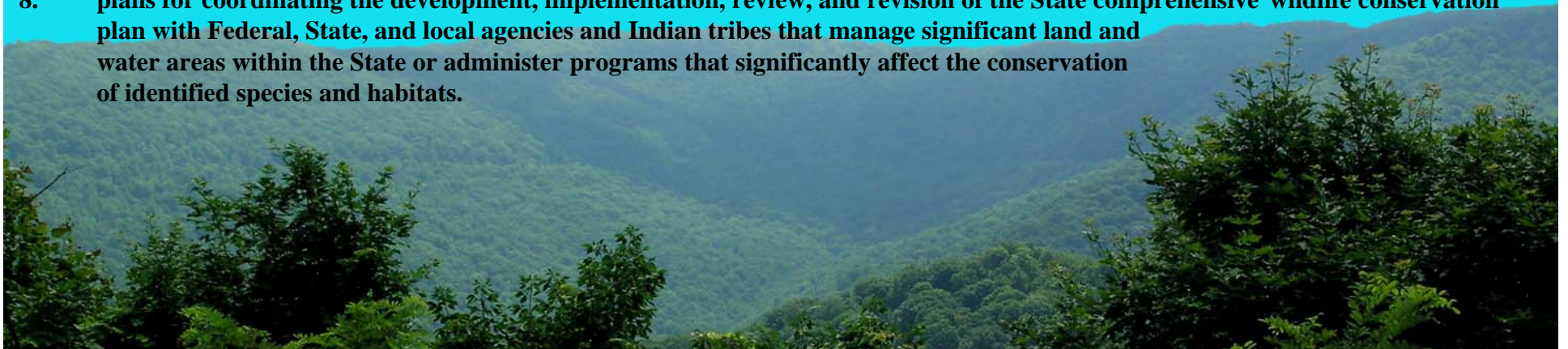
Bobwhite Quail
Wild Turkey
White-tailed Deer

The Comprehensive Wildlife Conservation Strategy

In appropriating SWG funds for “species of concern” Congress is requiring all states to develop a Comprehensive Wildlife Conservation Strategy. This nationwide planning effort is the largest conservation planning effort undertaken by states. All plans must include eight essential elements.

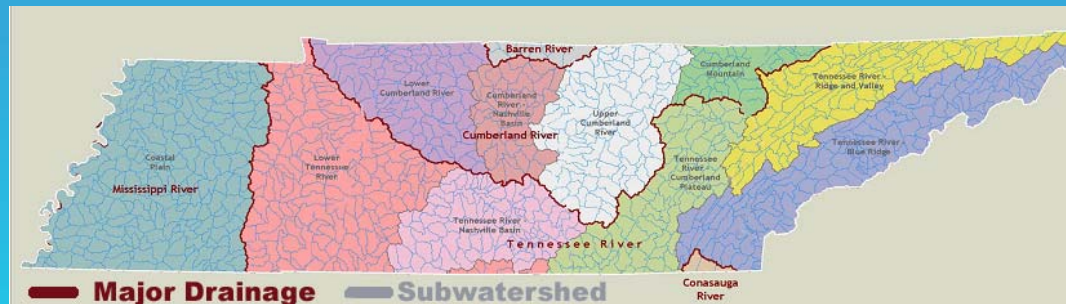
Each State’s Comprehensive Wildlife Conservation Strategy must include the following items:

- 1. identification of “species of concern” (All animal groups must be considered.);**
- 2. information on the distribution and abundance of species of wildlife including low and declining populations as the State fish and wildlife agency deems appropriate, that are indicative of the diversity and health of the State’s wildlife;**
- 3. descriptions of locations and relative condition of key habitats and community types essential to conservation of species identified;**
- 4. descriptions of problems which may adversely affect species identified or their habitats, and priority research and survey efforts needed to identify factors which may assist in restoration and improved conservation of these species and habitats;**
- 5. descriptions of conservation actions proposed to conserve the identified species and habitats and priorities for implementing such actions;**
- 6. proposed plans for monitoring “species of concern” and their habitats, for monitoring the effectiveness of the conservation actions proposed and adapting these conservation actions to respond appropriately to new information or changing conditions;**
- 7. descriptions of procedures to review the State Comprehensive Wildlife Conservation Plan at intervals not to exceed ten years;**
- 8. plans for coordinating the development, implementation, review, and revision of the State comprehensive wildlife conservation plan with Federal, State, and local agencies and Indian tribes that manage significant land and water areas within the State or administer programs that significantly affect the conservation of identified species and habitats.**

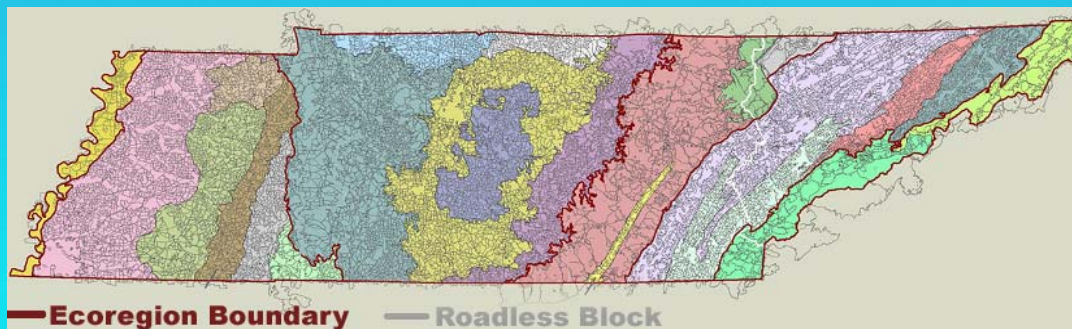


Tennessee's Strategy. The Tennessee Wildlife Resources Agency is partnering with The Nature Conservancy in developing a combined ecosystem approach.

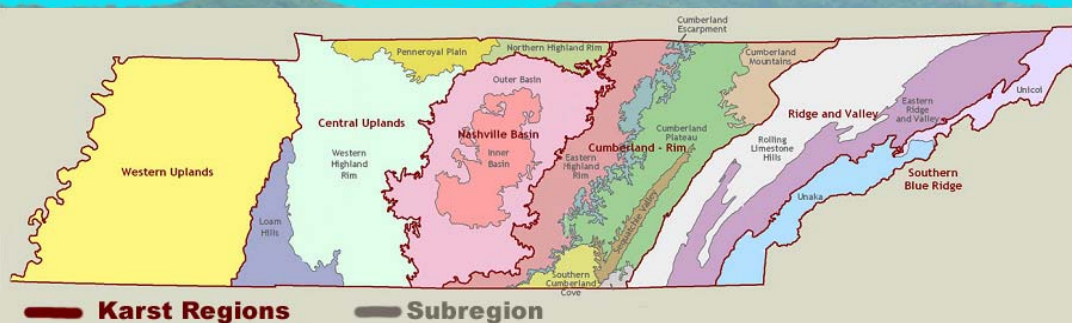
The Nature Conservancy pioneered the ecosystem approach to conservation planning. Through the use of technologies such as Geographical Information Systems (GIS) species and habitat data can be analyzed, collectively, at various scales.



Data for aquatic species and habitat will be analyzed by subwatershed.



Data for terrestrial species and habitats will be analyzed by roadless block.



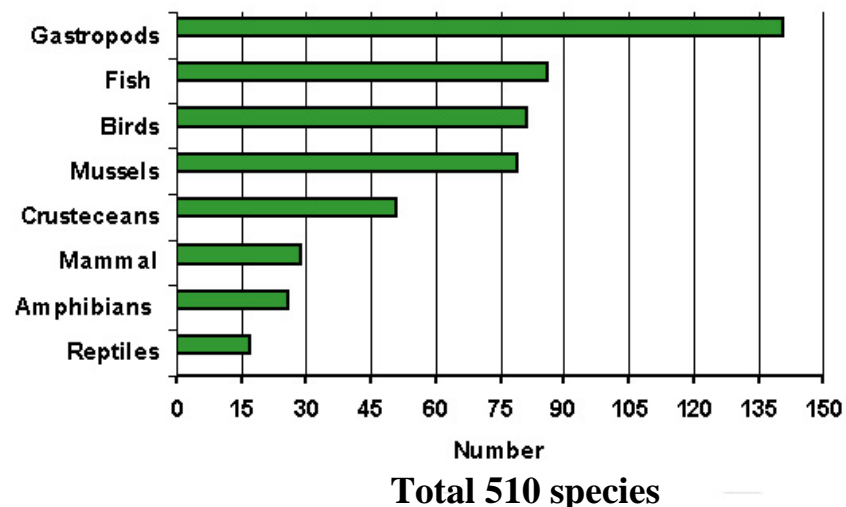
Data for cave dwelling species will be analyzed By karst subregion.

Species of Concern

The SWG program requires that state's consider all wild fauna in developing their CWCS. Tennessee has made that consideration. Several conditions can lead to a species being considered as a "Species of Concern":

1. **Rarity and Imperilment:**
 - (a) Federally listed endangered or threatened species or species of management concern
 - (b) State listed endangered, threatened, or need of management species
 - (c) Species considered imperiled by the Tennessee Natural Heritage System
2. **Species with declining population trends, vulnerability due to endemic, disjunct, or peripheral status in the ecoregion, or a focal species (i.e. keystone or wide-ranging species)**
3. **Special considerations:**
 - (a) Birds with a Partner in Flight (PIF) score greater than 21
 - (b) National Shorebird Prioritization Score, Conservation Category rank of 4 or higher
 - (c) Globally significant aggregations of species
 - (d) Commonality of targets among other ecoregions
 - (e) Biodiversity 'hotspots' containing specific species
 - (f) Species sharing common ecological processes.

Species of Concern by Major Wildlife Group



Other Wild Faunal Groups Considered

Misc. Invertebrates	28
Arachnids	31
Insects	161
Total	220 species

Other Agency Participation

Other state and federal agencies and nongovernmental organizations are contributing in the process through biologist involvement and through a multi-agency steering committee.

Steering Committee Members

State Participation:

Tennessee Wildlife Resources Agency

Tennessee Division of Forestry

Tennessee Department of Environment and Conservation

Tennessee Department of Transportation

Federal Participation:

The National Park Service

The U. S. Forest Service

The Natural Resource Conservation Service

The Tennessee Valley Authority

U. S. Fish and Wildlife Service

Nongovernmental Organization Participation:

The Nature Conservancy

World Wildlife Fund

Tennessee Conservation League

Tennessee Ornithological Society

You can participate by taking the CWCS survey at:

<http://www.state.tn.us/twra/nongmain.html>

